Journal of Dental Sciences and Education

Case Report

DOI: 10.51271/JDSE-0006

Management of a complex dentoalveolar trauma: a case report

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Cite this article: Ayla Y, Yıldız Domaniç K. Management of a complex dentoalveolar trauma: a case report. *J Dent Sci Educ*. 2023;1(1):27-29.

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Submit Date: 28/03/2023 **Accept Date:** 29/03/2023

ABSTRACT

This paper describes the case of a 33-year-old male patient with a severe lateral and canine luxation of the maxillary incisors who felt down the stairs. Treatment involved suture of the soft tissues lacerations, and repositioning and splinting of the injured teeth, followed by endodontic treatment, periodontal surgery and prosthetic restorations. After a 1-year follow-up, clinical and radiographic evaluation revealed that the incisors presented satisfactory esthetic and functional demands.

Keywords: Dental trauma, endodontics, prosthodontics

INTRODUCTION

Traumatic injuries in adults are a common problem that usually results from accidents, contact sports, falls, and violence (1,3). Report rate of dental trauma is low, despite this, rate of the affected population is %5. Dental trauma injuries are the most common problems after dental caries especially among children and young adolescents (6,8)

The most common dentoalveolar traumatic injuries occur in the upper incisor area and most common types of injuries affecting periodontal tissues are luxations, whose prevalence varies from 15 to 61% (1,7). Luxation diagnosis depends on clinical and radiographic findings; laterally luxated teeth often have their crowns displaced palatally, which usually results in comminution or fracture of the labial alveolar bone and considerable injury to the periodontal ligaments (1). Although luxation can be clinically diagnosed, a radiographic examination must be done to ensure that it is the only injury (1,2). Because traumatic injuries are difficult to treat, the correct diagnosis must also be associated with prompt treatment and a long follow-up period so that the treatment is successful (1,10). This paper describes the treatment of a severe traumatic injury involving the extraoral soft tissues extending from the upper lip to the nose, as well as intraoral structures, namely the upper lip mucosa, the maxillary lateral incisors and canine and the surrounding periodontal tissues in a 33-year-old man followed up for a period of 1 year.

CASE REPORT

A 33-year-old Caucasian male patient was brought by his friend to the Emergency Unit of the Bayindir Hospital, about 10 h after felt down the stairs, that resulted in dental trauma. He had already been seen by the medical staff of the emergency unit of a local hospital, where suture of the extraoral tissues was done and no neurological damage or medical complications were detected. Past medical history was reviewed and a signed, written informed consent form was obtained from him for treatment and further publication of the case. The patient was in excellent health with no remarkable past medical history.

Clinical examination showed nasal and maxillary lip bruises, as well as laceration of the maxillary labial mucosa and buccal gingiva with the fracture of the maxillary right permanent lateral incisor and canine. Due to Andreasen Classification, lateral incisor has a complicated fracture involving enamel, dentine and exposing pulp and canine has a fracture involving enamel, dentine, sementum and exposing the pulp. (5) Panaromic and periapical radiographic examination (**Figure 1-2**) and CBCT images (**Figure 3**) did not show root fracture or any other injuries involving other teeth.

Figure 1. Panoramic X-Ray at the beginning.

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Figure 2. Periapical X-Ray for diagnosis at the beginning

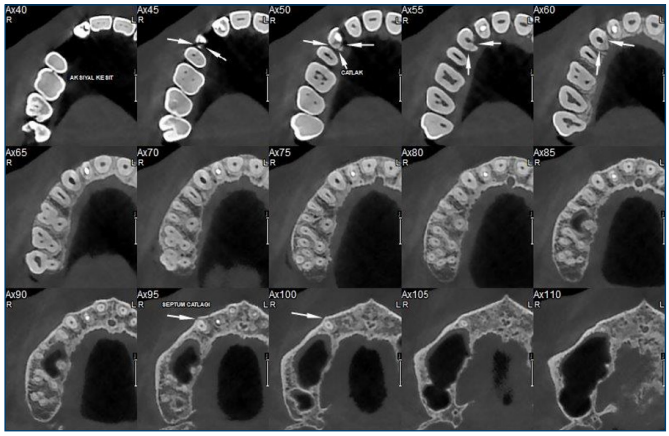

Figure 3. Axial CBCT images at the beginning

After 7 days, both incisors' root canals shaped using Protaper Next X5 files (Dentsply Sirona, USA) and dressed with a calcium hydroxide-based dressing (AH-temp, Dentsply Sirona,USA). 10 days later endodontic treatments of both teeth were completed using AH Jet paste (Dentsply Sirona, USA) as sealer and Protaper Next X5 gutta perchas (Dentsply Sirona, USA) (**Figure 4**). G-Premio Bond (GC Europe) and EverX Flow (GC Europe) was used as coronal filling material.

Figure 4. Periapical X-ray just after the endodontic treatment

After endodontic treatments completed, individual zirconium crowns were made in three sessions with the trying session (**Figure 5**)

Figure 5. Crown restorations just after treatment

The patient was recalled regularly. At 1 year follow-up, clinical and radiographic examination showed healthy tissues and teeth, and both incisors presented satisfactory functional and esthetic demands (**Figure 6-8**).

Figure 6. Panoramic X-Ray one-year follow up

Figure 7. Periapical X-Ray one-year follow up

Figure 8. Crown restorations one- year follow-up

DISCUSSION

The 33-year-old man of this case report had a complex traumatism involving dentoalveolar structures and soft tissues, caused by a felt down the stairs accident. In fact, male traumatic injuries to permanent dentition appear to be more severe and are among the variety of conditions that can cause trauma. Indeed, accidents involving cycling or other sports activities account for 30% of the injuries to the facial region (3).

The direction of trauma and health of the periodontal tissues affect the severity of the damage. When the trauma directly comes the tooth the result is crown fracture, soft tissue injury and malalignment (9).

There are four different classifications of dental trauma; Andreasen, World Health Organisation, Garcia-Godoy and Ellis classifications. This case was evaluated due to Andresen classification and treatment planning was made due to the latest International Association of Dental Traumatology (IADT) guidelines. This guidelines advice a follow-up schedule and some complications due to the trauma itself (4) In this case there is only 1 year follow-up (5).

It is impossible to prevent accidents completely that might result in dental injuries (3), but their associated complications can be avoided by ready and adequate treatment and follow-up. In the present case, the correct diagnosis and treatment were crucial to the successful management and preservation of the traumatized teeth. Finally, it should be highlighted the importance of a multidisciplinary treatment of traumatic injuries, such as in the present case, in which endodontic, restorative and periodontal procedures were combined to recover the esthetics and function of the traumatized area.

CONCLUSION

Right ventricular remodeling is common during progress of COPD as well as obstructive and amphiteomatous changes in the pulmonary system. Imaging should be part of the routine examination in patients with COPD to detect thrombus/mass that may affect mortality, as well as assessment for elevated pulmonary pressure.

ETHICAL DECLARATIONS

Informed Consent: All patients signed the free and informed consent form.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

Financial Disclosure: The authors declared that this study has received no financial support.

Author Contributions: All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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